Claims

1. Electrohydraulic brake system for motor vehicles, with a brake pressure sensor, which can be actuated with a brake pedal, with a pressurizing medium reservoir, with at least one electrohydraulic pressure source, by means of which pressure can be applied to the wheel brakes of the motor vehicle, which brakes can be connected via at least one hydraulic connection, which can be sealed off by means of a separation valve, with a device for the identification of the driver's deceleration instruction, with inlet valves which are connected before the wheel brakes and outlet valves which are connected after the wheel brakes, with an electronic control and regulation unit, which, as a function of signals which are generated by the device for the detection of the driver's deceleration instruction, actuates the pressure source, the separation valve, of which there is at least one, as well as the inlet valves and the outlet valves, as well as with a valve block, which receives the separation valve, of which there is at least one, as well as the inlet valves and the outlet valves, where the pressure source, the wheel brakes as well as the brake pressure sensor can be connected with the pressurizing medium reservoir, **characterized in that** the brake pressure sensor (2) is integrated in the valve block (16) in such a manner that all of the hydraulic connections between the brake pressure sensor (2) and the separation valve (27-30), of which there is at least one, as well as the inlet valves (47-50) are formed by bores in the valve block (16).

2. Electrohydraulic brake system according to Claim 1, **characterized in that** the electrohydraulic pressure source consists of a pump (26) which is driven by an electromotor (21) and which is also integrated in the valve block (16) in such a manner that the connections between the pump (26) and the inlet valves (47-50) consist of bores in the valve block (16).

3. Electrohydraulic brake system according to Claim 1, **characterized in that** the electrohydraulic pressure source consists of a high-pressure reservoir, which is loaded by means of a motor-pump aggregate.

4. Electrohydraulic brake system according to Claim 1 or 2, **characterized in that** the pressurizing medium reservoir (6) is arranged on the valve block (16) and it is formed in its entirety or partially by the valve block (16), and in that the hydraulic connections between the pressure source (26) and the pressurizing medium reservoir (6), as well as between the hydraulic connections between the brake pressure sensor (2) and the pressurizing medium reservoir (6), consists of bores in the valve block (16).

5. Electrohydraulic brake system according to one of Claims 1-4, **characterized in that** the electronic control and regulation unit (14) is attached directly to the valve block (16) in such a manner that electrical, magnetic and thermal signal and power transmissions occur without the use of lines.

6. Electrohydraulic brake system according to Claim 4, **characterized in that** the hydraulic connection (22) between the pressure source (26) and the pressurizing medium reservoir (6), and optionally parts of the pressure medium reservoir (6) can be heated.

7. Electrohydraulic brake system according to one of Claims 1-6, **characterized in that** the valve block (16) as well as the piston rod (24), which is used to actuate the brake pressure sensor (2), are connected in a manner which allows elastic oscillations with the body or a dashboard (66) of the motor vehicle or to a pedal system.

8. Electrohydraulic brake system according to one of Claims 1-7, **characterized in that** the pressurizing medium reservoir (6) presents a first chamber (61) as well as a second chamber (62), where the aspiration side of the pump (26) and, via the outlet valves (57-60), the wheel

brakes (17-20) are connected to the first chamber (61), while the brake pressure sensor (2) is connected to the second chamber (62) via a first, current-free closed (CC) valve (5), which can be regulated by analog means.

9. Electrohydraulic brake system according to Claim 8, **characterized in that** means (11, 12) are provided for the detection of the pressurizing medium level in the first and the second chamber (61-62).

10. Electrohydraulic brake system according to one of Claims 1-9, **characterized in that** the brake pressure sensor (2) is connected to the input connection of the inlet valves (47-50) via a second, current-free closed (CC) valve (13), which can be regulated by analog means.

11. Electrohydraulic brake system according to one of Claims 1-10, **characterized in that** the inlet valves and the outlet valves (47-50, 57-60) are designed as electromagnetically activated, current-free closed (CC) 2/2-way control valves.

12. Electrohydraulic brake system according to one of Claims 1-11, **characterized in that** the separation valves (27, 28, 29, 30) is assigned to each wheel brake (17, 18, 19, 20), and in that the separation valves (27-30) are designed as electromagnetically activated, current-free open (CO) valves, which can be regulated by analog means.

13. Electrohydraulic brake system according to one of Claims 1-12, **characterized in that** the brake pressure sensor (2) is designed as a single-circuit main brake cylinder.

14. Electrohydraulic brake system according to one of Claims 8-12, **characterized in that** the brake pressure sensor (2) is designed as a two-circuit main brake cylinder, whose secondary pressure space (45) is connected via the first, current-free closed (CC) valve (5), which can be regulated by analog means, to the second chamber (62), while the primary pressure

space (25) of said cylinder is connected via an electromagnetically actuated 2/2-way control valve (32) to the secondary pressure space (45).

15. Electrohydraulic brake system according to one of the preceding claims, **characterized in that** a hydraulic pressure space (33) is connected before the piston (42) of the main brake cylinder (2), where the pressure space receives pressure that is generated by the pump (26).

16. Electrohydraulic brake system according to Claim 15, **characterized in that**, in the line (34) which connects the pressure side of the pump (26) to the pressure space (33), an electromagnetically activated, current-free (CO) 2/2-way or control valve (35) is inserted, which makes it possible to cut off the line (34).

17. Electrohydraulic brake system according to one of Claims 15 or 16, **characterized in that** the hydraulic pressure space (33) is connected with the insertion of a check valve (41) to the pressuring medium reservoir (6).

18. Electrohydraulic brake system according to one of Claims 15, 16 or 17, **characterized in that** the piston (42) delimits a trailing space (44), which is connected to the pressurizing medium reservoir (6), which in turn is connected via the check valve (41) to the pressure space (33).

19. Electrohydraulic brake system according to Claim 15, **characterized in that** an air regulator (53) is provided between the check valve (41) and the pressurizing medium reservoir (6), and a parallel connection is provided between the hydraulic series connection, which consists of the check valve (41) and the air regulator (53), and an electromagnetically activated, current-free open (CO) control valve (52).

20. Electrohydraulic brake system according to one of the preceding claims, characterized in that the pressure sensor (2) is connected to the aspiration side of the pump (26) and, between the connection of the pressure sensor (2) and the pressurizing medium reservoir (6), a check valve (56) is arranged, which opens towards the pump (56).

21. Method for the operation of an electrohydraulic brake system for motor vehicles, with a brake pressure sensor, which can be actuated with a brake pedal, with a pressurizing medium reservoir, with at least one electrohydraulic pressure source, by means of which pressure can be applied to the wheel brakes of the motor vehicle, which brakes can be connected via at least one hydraulic connection, which can be sealed off by means of a separation valve, with a device for the identification of the driver's deceleration instruction, with inlet valves which are connected before the wheel brakes and outlet valves which are connected after the wheel brakes, with an electronic control and regulation unit, which, as a function of signals which are generated by the device for the detection of the driver's deceleration instruction, actuates the pressure source, the separation valve, of which there is at least one, as well as the inlet valves and the outlet valves, as well as with a valve block, which receives the separation valve, of which there is at least one, as well as the inlet valves and the outlet valves, where the pressure source, the wheel brakes as well as the brake pressure sensor can be connected with the pressurizing medium reservoir, **characterized in that**, in the normal braking operation, a continuous buildup of the hydraulic pressure is produced in the wheel brakes (17-20) by means of the electrohydraulic pressure source (26), and a continuous decrease of the hydraulic pressure is produced in the wheel brakes (17-20) by means of at least one separation valve (27-30).

1. [sic] Method according to Claim 21, **characterized in that**, during the actuation of the brake pressure sensor (2), the displaced pressurizing medium volume is led, in a first phase, via the separation valves (27-30), to the wheel brakes (17-20) and, in a second phase, via at least one electrically actuated valve (5), which can be controlled by analog means, to the pressurizing medium reservoir (6).